

Hystrix brevispinosus, Wagner.

H. javanica, Waterh. ; Blainv. Ostéogr. t. 2 (skull).

Brown ; throat whitish.

Hab. Java ; a stuffed specimen and skull in the British Museum.

This animal was regarded as the male parent of the "Hybrid Porcupine."

3. ACANTHION FLEMINGII, Gray, P. Z. S. 1847, p. 103.

From a skull in the British Museum, perhaps the same as the former. Mr. Bartlett called it "the square-spined, not crested, Porcupine." This makes me more doubtful of the history of the former specimen.

Mr. Waterhouse, in the observations on this skull in his 'History of Mammalia,' vol. ii. p. 468, seems to have confounded it with the skull of the "*Hybrid Porcupine*," said to have been bred in the Surrey Zoological Gardens ; but both these skulls are in the Museum, and they appear to be distinct. The "Hybrid Porcupine" has a distinct nuchal crest ; and this is said distinctly to be the skull of an animal without any crest ; so I do not see how they can be the skulls of the same species and the result of the same interbreeding.

Unfortunately Mr. Gerrard, in the 'Catalogue of Bones in the British Museum,' p. 199, has copied and adopted Mr. Waterhouse's observation.

The *Hystrioidæ* have been generally characterized by being destitute of any clavicle or collar bone ; but this is true only as far as the genera belonging to the eastern hemisphere. The skeletons of the other genera have not been described, but they are contained in the British Museum Collection.

The skeletons of the genera *Erethizon*, *Sphiggurus*, and *Chætomys* each have a well developed clavicle, attached to the keel of the scapula and to the front of the chest-bone. The bones vary in thickness and strength in the different genera.

Professor Brandt calls one of the species of *Hystrix* *H. hirsutirostris* ; but I have not seen any Porcupine that has not a hairy muzzle.

3. Description of *Trachichthys darwinii*, a new species of Berycoid Fish from Madeira. By JAMES YATE JOHNSON, C.M.Z.S.

(Plate XXXII.)

Family BERYCIDÆ.

TRACHICHTHYS DARWINII, sp. n. (Pl. XXXII.)

D. 8.14. P. 14. A. 3.12. V. 1.6. C. 11+10. M. B. 8.

Sq. lin. lat. 27.

Body elliptical, compressed, high, clothed with broad scales somewhat irregularly disposed, the exposed surfaces and margins of which

are rough with spinulæ, giving a frosted appearance to the fish. The head and all the fins are of a bright-red colour; the back is brownish red, passing into grey on the sides; the belly is white. Compared with the length between the snout and the base of the caudal fin, the height is as 1 to $2\frac{1}{2}$.

The *head* is obtuse truncate and arched between the eyes; the muzzle short, rounded, and protrusile. Compared with the total length, the head is as 1 to $3\frac{1}{2}$. The *mouth* is very large and nearly vertical; its superior border is formed by the styliform premaxillary, which is widely notched at the symphysis. The stouter and longer maxillary is much dilated below, where it is furnished with a large supplementary striate plate, as in *Beryx*. The maxillary reaches backwards to the vertical from the middle of the eye. The lower jaw fits inside the upper one, and its bones are strongly and deeply striate; there are two bony knobs at the chin. The premaxillary and mandibular bones are armed with narrow bands of villiform *teeth*, those of the innermost row being a little longer than the rest. The greater part of the band on the upper jaw remains outside the mouth when it is closed. The band on the lower jaw is interrupted at the symphysis, and is there much broadened, this part of the band being also left outside of the mouth when it is closed. The bands of villiform teeth on the palatine bones are recurved in front, and there is a very small round patch of similar teeth on the vomer. The toothless black *tongue* is adherent throughout. The floor and sides of the mouth and the inner sides of the gill-covers are black, or marked with black patches, whilst the palate is red. From the chin there extends along the throat a broad band of corrugated scales, and this band forks behind.

The *nostrils* are close together near the upper anterior part of the orbit, the hinder one being larger. The nearly round and moderate-sized *eye* is placed high up, but does not take part in the profile; its diameter is to the head as 1 to $4\frac{1}{2}$ nearly. The suborbital bones carry several broad radiating crests, which are less prominent than in *Hoplostethus*. The scales of the nape do not quite reach to the posterior part of the orbit. On the top of the head are several flat roughened bony crests, two of which extend from the nape to the front of the snout, where they terminate in short stout blunt spines in front of the anterior nasal orifice; and here each sends off a short transverse crest. The former crests converge in front of the middle of their length, and include posteriorly to the point of convergence an elongated subtriangular depression, and anteriorly another triangular depression. In the nasal region, between these and other crests lying near the superciliary margin, there is a lozenge-shaped depression on each side. The superciliary margin is formed of a similar crest.

The cheeks are scaly, and the preopercle bears a striate crest near to, and parallel with, its serrulate posterior border, which inclines obliquely downwards and forwards. The under border of the preopercle is straight and serrulate; and at the angle a long stout striated spine, with spinulose edges and a crest along a portion of its middle, projects backwards, across, and beyond the interopercle, but

not so far as the edge of the branchiostegal membrane. The height of the *opercle* is not quite twice its width; its surface is traversed with strong roughened crests, radiating for the most part from a point high up near the anterior margin. A higher and broader crest crosses the upper part of the opercle, and projects beyond the border as a strong but short spine. Above this transverse crest is another series of smaller radiating crests. The edge of the opercle is irregularly serrate or sinuous. The *subopercle* is narrow, and closely applied to the lower and hinder edge of the opercle; its border is entire, and its surface is set with numerous serrulate crests, except at the upper part, where it is clothed with small scales. At the lower end there is a spine projecting backwards and forming the lower side of a sinus. The large *interopercle* is very rough with serrulate crests, and has a deep and wide sinus, which is covered by the great spine of the preopercle. Between the anterior extremity of the interopercle and the posterior angle of the lower jaw there intervenes a stout membrane, in which are implanted some rough bony plates, which seem at first sight as if they formed part of the interopercle.

All the branchiostegal rays, eight in number, are exposed, and the lowest three rays carry a serrulate crest. Pseudobranchiæ are present.

The hinder border of the *suprascapula* is serrulate, and its lower part is obliquely crossed by a low crest, which terminates in a very short spine. The *scapula* is narrowly elliptical, and wider above than below; its surface is striate, but it is destitute of a spine. The strong *humeral* bone is broad above, and its surface is striate.

The large imbricated striate bony plates (ten in the specimen) forming a *ventral keel* extending from the root of the ventral fins to the vent, increase in size from each end of the series to the middle; and each plate consists of a broad wing with spinulose edges, bent down upon each side so as to embrace the abdomen, and of a central elevated ridge, which projects backwards as a sharp spine.

In front of the *dorsal* fin there is a row of glossy scales along the ridge of the back from the occiput to the fin; they have something of the shape of, but are much smaller than, those of the ventral keel; each has a short spine at the middle of the exposed margin. The dorsal fin rises from a groove, is much longer than high, and commences behind the root of the pectoral fins, but nearer to the snout than to the base of the caudal fin. The spinous portion is a little shorter than the soft part, and it falls in posteriorly as far as the seventh spine, which is shorter than the eighth. The fourth is the longest spine. The soft portion of the fin, which has all its rays branched, is higher anteriorly than the spinous part, the third and fourth rays being the longest. At each side of the base of both the dorsal and anal fins there is a series of large rough scales, which are somewhat trapezoidal in shape.

The *pectoral* fins are inserted in the same horizontal line as the lower ends of the maxillary, and considerably below the middle of the height. They are ovato-lanceolate in shape, and they do not reach nearly to the vent, not extending beyond the vertical of the

seventh dorsal spine. They are much longer than the *ventral* fins, which are inserted under their roots. These fins, which have rounded apices, are supported by a long stout and striated spine and six branching rays. The space between and in front of their roots is flat. The vent is placed a little in advance of the anal fin, about three-fourths of the total length behind the snout. The trapezoidal *anal* fin commences under the seventh soft ray of the dorsal fin, and terminates at some distance from the base of the caudal fin, a little behind the end of the dorsal. The first of its three stout spines is very short; and the third, though much longer than the second, is only half as long as the soft portion of the fin is high. The lobes of the deeply forked *caudal* fin are rounded at the tips, and the membrane between the rays is clothed with rows of small scales. At both the upper and under edges of the tail, and supplementary to the caudal fin, is a series of six glassy spines, which become gradually larger backwards.

The spines of the fins are striate but not roughened, whilst the exposed sides of the rays are strongly echinulate. The *lateral line* is a slightly elevated and oblique ridge on the upper part of the body, not following the curve of the back. It is formed of twenty-seven perforated and rather distant scales, which are somewhat larger than those clothing the body.

Only a single specimen of this interesting addition to the marine fauna of Madeira has been hitherto obtained. It was taken in the month of April of the present year; and, from the protruded stomach and inflated membranes about the eyes, it may be inferred that it came from a great depth. I have named it in honour of that accomplished man of science, Charles Darwin, Esq., to whom naturalists are greatly indebted, amongst many other labours, for an excellent monograph on the Cirripedia. The fishermen from whom I procured the specimen stated that they had never previously seen anything similar; the name of "Serra do alto," or Sawfish, alluding to the ventral keel, was therefore merely an impromptu appellation.

From *Hoplostethus mediterraneus*, C. & V. (of which I have obtained a few specimens at Madeira), it is distinguished generically by the possession of vomerine teeth. Even if it were congeneric with that fish (and some ichthyologists may think that *Hoplostethus* should not be separated from *Trachichthys*), several well-marked differences would point it out as a distinct species: *e. g.*, 1, the possession of eight spines and fourteen rays in the dorsal fin in place of six spines and thirteen rays, and of three spines and twelve rays in the anal fin in place of three spines and nine or ten rays; 2, the scaly cheeks; 3, the absence of a series of oblong cells near the posterior border of the preopercle; 4, the exposure of the whole branchiostegal membrane, which in *Hoplostethus* is entirely concealed by the gill-covers; 5, the shortness of the pectoral fins, which do not reach, as in *Hoplostethus*, to the vent.

With the two known species (both of them Australian) of the genus *Trachichthys* it agrees in having teeth on the vomer; but

from *T. australis*, Shaw, it may be distinguished, 1, by differences in the fin formula—viz. D. 8.14 and A. 3.12 in place of D. 3.12 and A. 2.10; 2, by the scales of the ventral keel being ten in number instead of eight; 3, by the height of the body, compared with the length from the snout to the base of the caudal fin, being as 1 to $2\frac{1}{2}$, not as 1 to 2; 4, by the smallness of the suprascapular spine. Again, from *T. elongatus*, Günther (Cat. Fishes Brit. Mus. i. 10), it is abundantly distinct: *e. g.*, 1. In that species the formula of the dorsal fin is 4.11, and of the anal fin 3.9. 2. In the species now described the dorsal fin is much longer than high, whereas in *T. elongatus* its height equals its length. 3. The spines of that fin become shorter backwards; in the case of *T. elongatus*, longer. 4. The ventral fins are much shorter than the pectoral, whereas in *T. elongatus* these fins are of equal length. 5. The anal fin commences under the middle of the soft portion of the dorsal fin, whereas in *T. elongatus* it begins under the end of that fin. 6. The spine at the upper angle of the opercle is large, but in the case of the Australian species it is scarcely visible. 7. The lateral line has 27 in place of 65 scales.

The following are the dimensions of the individual upon which the species is founded:—

	inches.
Total length (the mouth being closed)	19 $\frac{1}{4}$
Height in the pectoral region	6 $\frac{1}{2}$
Thickness in the same region	2 $\frac{1}{2}$
Head (mouth closed)	5 $\frac{1}{2}$
Eye, diameter	1 $\frac{1}{4}$
Distance from eye to eye over the arched head	2
Upper jaw, length	3 $\frac{3}{8}$
Width of open mouth	3 $\frac{3}{8}$
Snout, length of	1 $\frac{3}{8}$
Dorsal fin, distance from snout	6 $\frac{3}{8}$
—— —, length.	6 $\frac{3}{4}$
—— —, length of fourth spine	1 $\frac{1}{2}$
—— —, length of third and fourth rays.	2 $\frac{1}{4}$
Pectoral fins, length	3 $\frac{1}{2}$
—— —, width of base	$\frac{9}{10}$
—— —, distance behind snout	5 $\frac{1}{2}$
Ventral fins, length	2 $\frac{1}{2}$
—— —, width of base	$\frac{3}{8}$
—— —, length of spine	2 $\frac{1}{8}$
Vent, distance of its vertical from snout.	10 $\frac{1}{4}$
Anal fin, length	2 $\frac{9}{10}$
—— —, height	2 $\frac{1}{4}$
Tail, lowest height	1 $\frac{3}{8}$
Caudal, length	3 $\frac{3}{4}$
—— —, expanse	5
Ventral keel, length.	4 $\frac{3}{8}$
—— —, width of middle plates	1